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CENTRAL INTELLIGENCE AGENCY

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MODEL 5AKD AUTOMATIC FOR INSPECTING BEARING RINGS

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Automatics employing a pneumatic method of checking bearing rings are being produced in the USSR for the first time. At present, the Leningrad Tool Plant is the only enterprise in the country producing such machines.

This type of machine was developed by the designers Ya. Sokolin, I Zhukov, and T. Sivashinskaya and electrical engineer N. Barakan, in cooperation with A. Serbryakov, engineer at a scientific-research institute. The machine is one meter long, 60 centimeters wide, and 1.5 meters high. The machines inspect rings from 16 to 52 millimeters in diameter.

The bearing rings are placed in the hopper of the machine. They drop in strict order onto a carriage which carries them under a measuring device. The ring is grasped by a rotator which turns it 1.5 times. During its rotation, the dimensions and shape of the ring are measured by special pneumatic measurers. Electric pulse-type transmitting elements, pneumatically linked with the measurers, sort the rings according to the type of reject and separate and count those that are suitable.

The automatic replaces the work of a large number of skilled inspectors. Its productivity is 700-900 rings per hour and its measuring accuracy is within one micron. Ten machines can be attended by one set-up man of average skill and a helper. In a short time, inspectors will be replaced by automatics at all bearing plants.

In 1953, special photoconductive cells (fotosoprotivleniya) developed and manufactured by the Institute of Physics, Academy of Sciences USSR, have been used in the automatics for the first time. They contribute to the automatic's uninterrupted operation and protect it against breakdown. In the event of improper passage of the bearing rings, a ray of light shines through an aperture onto the photocell and the photoconductive cell stops the machine, preventing possible damage.

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